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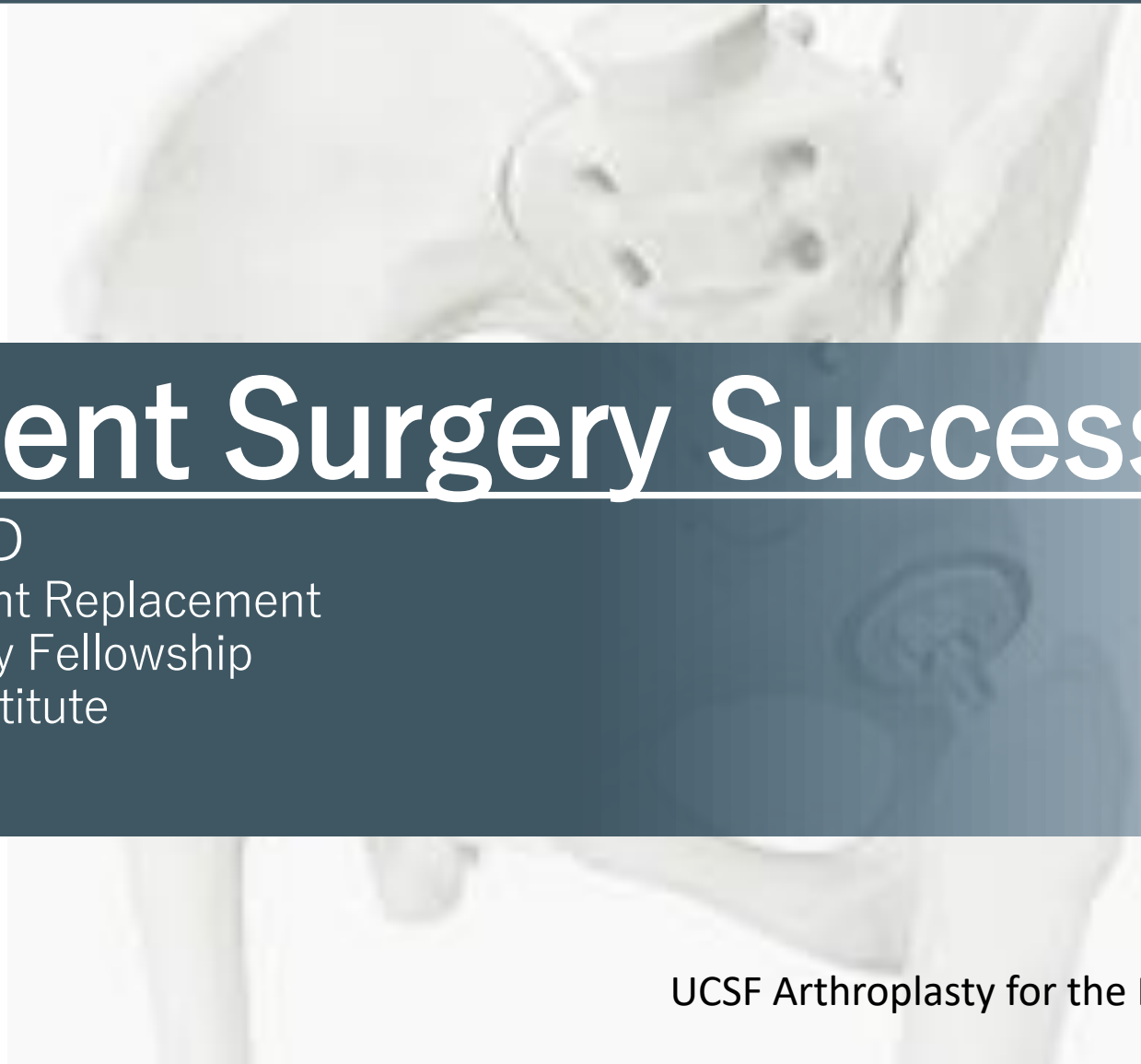

Outpatient Surgery Success

Nader Nassif, MD
Chief, Division of Joint Replacement
Director, Arthroplasty Fellowship
Hoag Orthopedic Institute

UCSF Arthroplasty for the Modern Surgeon, September 2024

Disclosures:

- Consultant: Depuy-Synthes
- Royalties: Depuy-Synthes
- Institutional Education and Research Support
  - OREF Omega Grant
  - Depuy-Synthes
  - The Hoag Foundation

Current State of Outpatient Arthroplasty

Same Day TJA is safe and effective

Same-Day Discharge Total Hip and Knee Arthroplast Complications, and Readmission Rates

Eytan M. Debbi, MD, PhD *, Gina M. Mosich, MD, Ilya Bendich, MD
Milan Kapadia, BS, Michael P. Ast, MD, Geoffrey H. Westrich, MD

Department of Adult Reconstruction and Joint Replacement, Hospital for Special Surgery, New York, NY

Outpatient total knee and hip arthroplasty present comparable and even better clinical outcomes than inpatient operation

...g[1,2†], Yihu Yi[2†], Ruoyu Wang[2], Lizhi Han[2], Tianlun Gong[2],
...Wang[2], Wenkai Shao[2], Yong Feng[2*] and Weihua Xu[2*]

Outcomes of Same-Day Discharge After Total Hip Arthroplasty in the Medicare Population

Oren I. Feder, MD, Katherine Lygrisse, Lorraine H. Hutzler, MPA,
Ran Schwarzkopf, MD, Joseph Bosco, MD, Roy I. Davi...

Department of Orthopedic Surgery, NYU Langone Health, NYU Langone Orthopedic Hospita...

Frequency and Timing of Complications and Catastrophic Events After Same-Day Discharge Compared With Inpatient Total Hip Arthroplasty

Nithin C. Reddy, MD [a, *], Heather A. Prentice, PhD [b], Elizabeth W. Paxton, PhD [b],
Adrian D. Hinman, MD [c], Ronald A. Navarro, MD [d]

[a] *Department of Orthopaedics, Southern California Permanente Medical Group, San Diego, CA*
[b] *Surgical Outcomes and Analysis, Kaiser Permanente, San Diego, CA*
[c] *Department of Orthopaedics, The Permanente Medical Group, San Leandro, CA*
[d] *Department of Orthopaedics, Southern California Permanente Medical Group, Harbor City, CA*

Similar Outcomes After Hospital-Based S... Inpatient Total Hip Arthroplasty

Jonathan A. Gabor, BS, Vivek Singh, MD, Ran Schwar...
Davidovitch Roy I., MD *

NYU Langone Orthopedic Hospital, NYU Langone Health, New York, NY, USA

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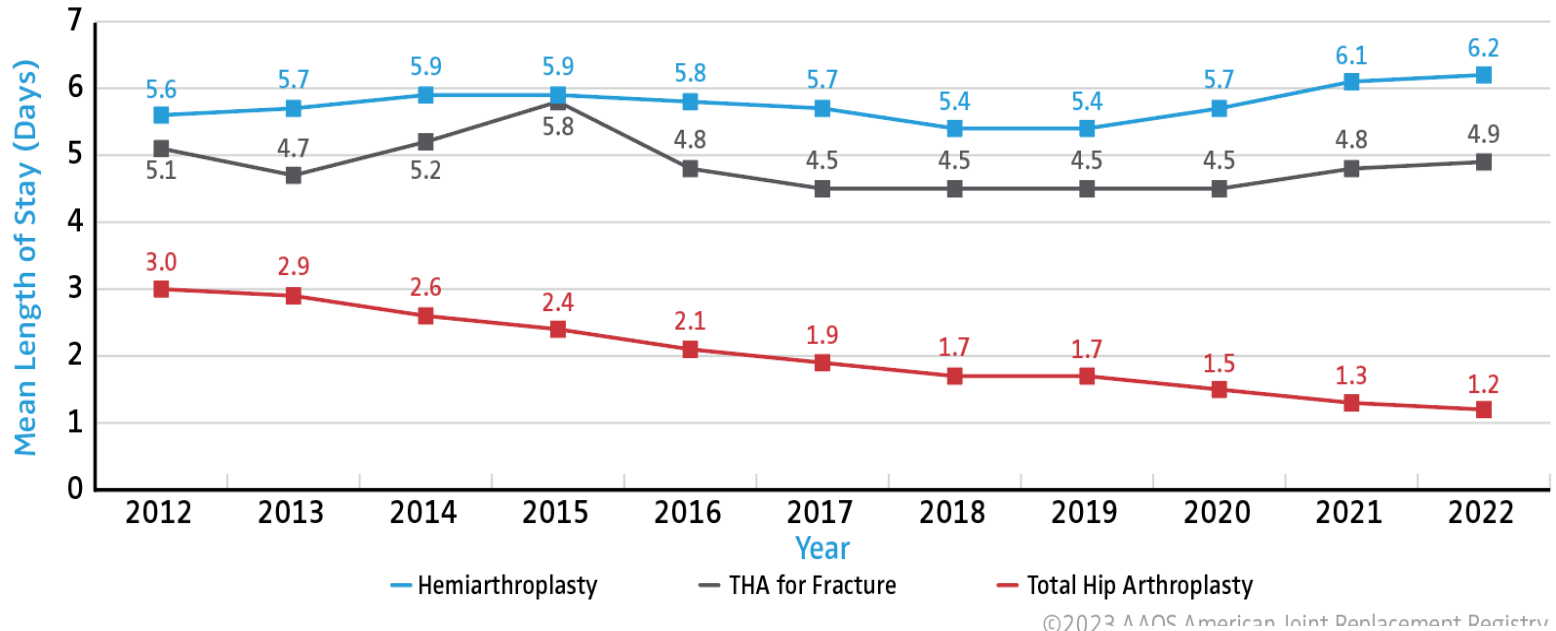
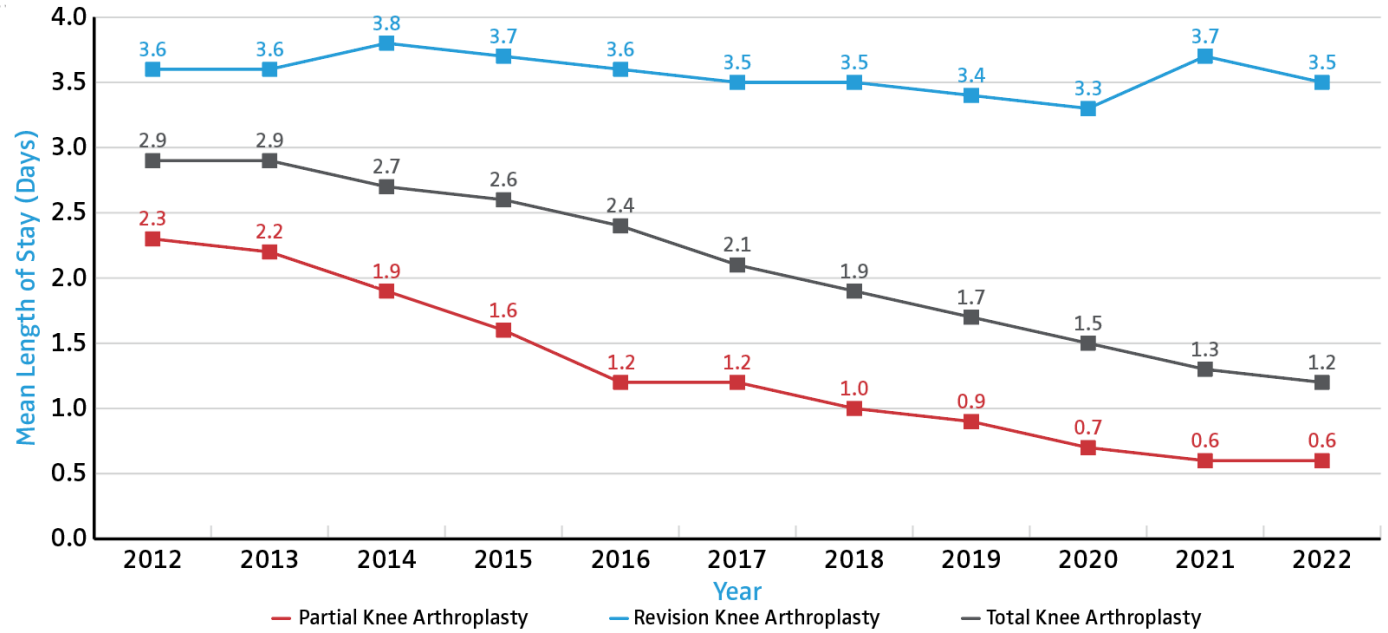
Current State of Outpatient Arthroplasty





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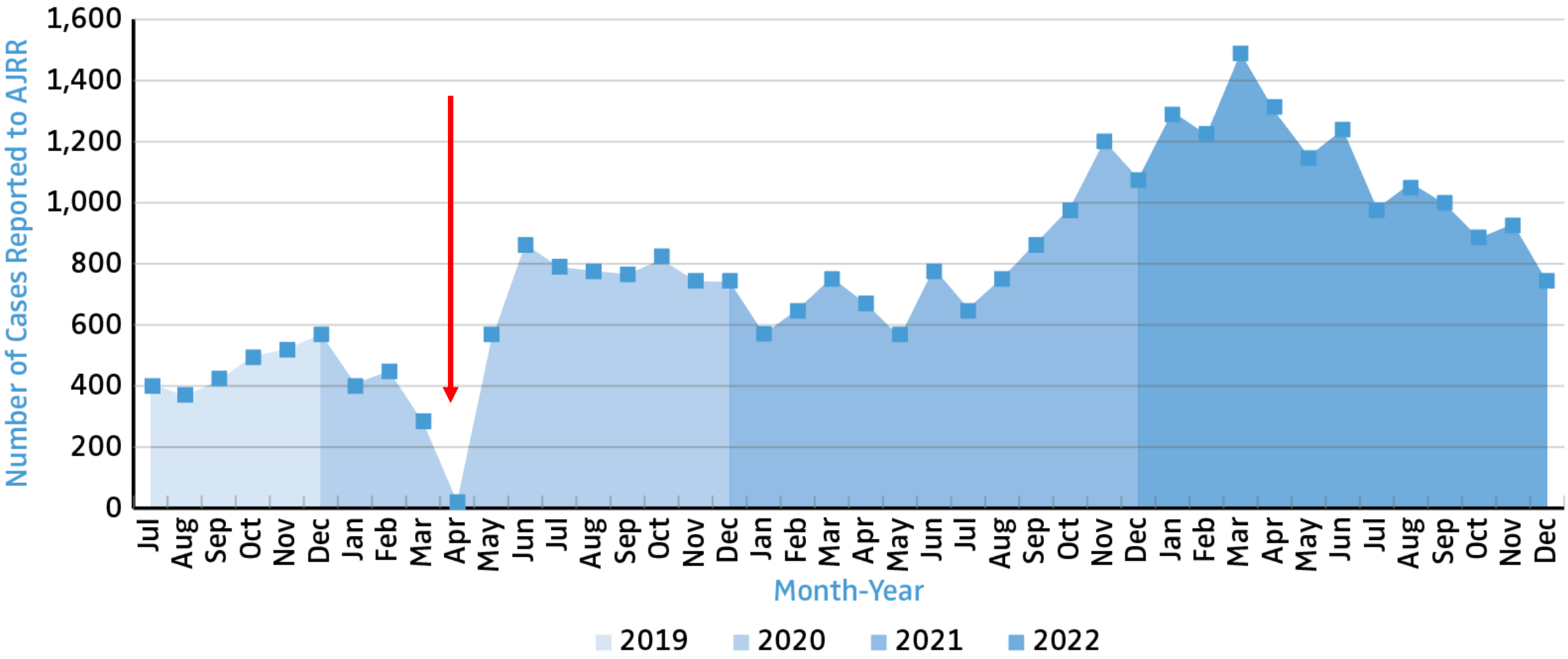
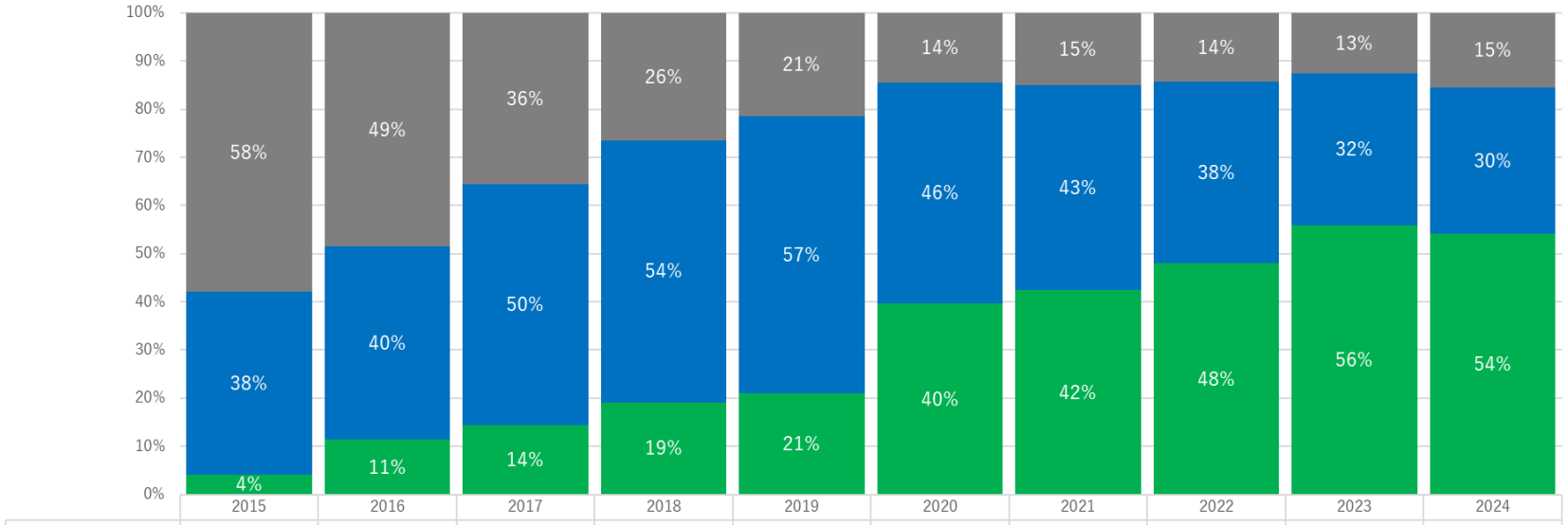
Current State of Outpatient Arthroplasty

AJRR: Ambulatory Surgical Center Case Volume by Month, Jul 2019 – Dec 2022

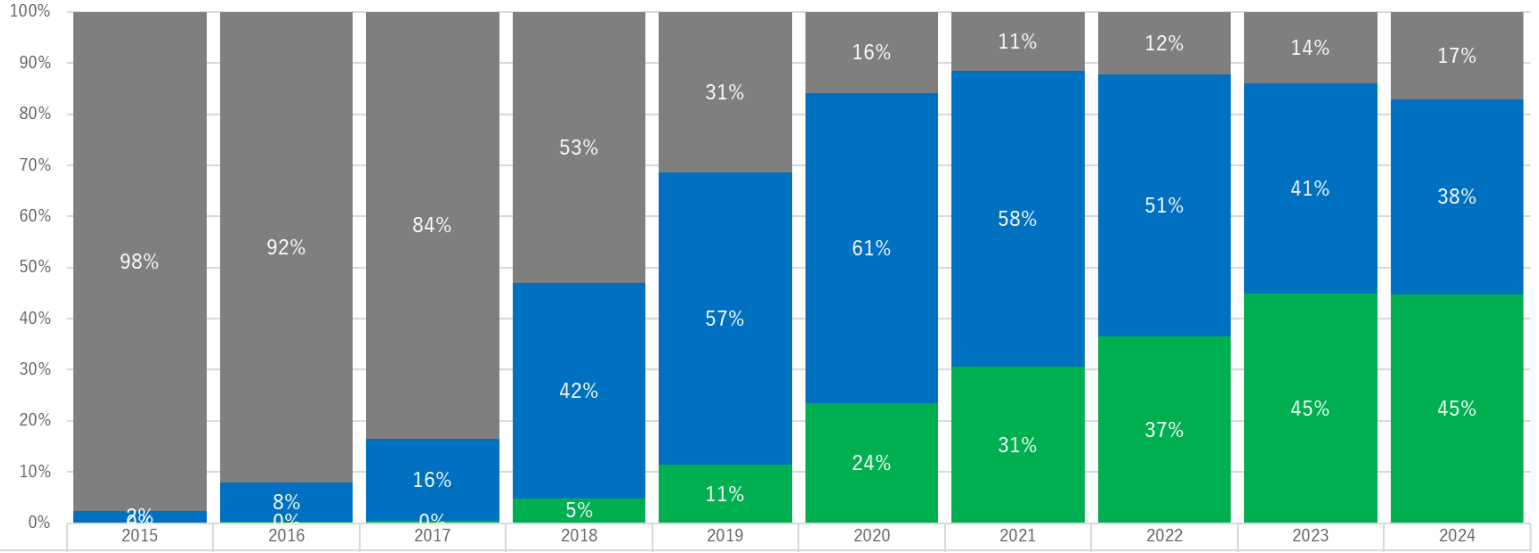


Current State of Outpatient Arthroplasty

THA Case Volume by Discharge Group



TKA Case Volume by Discharge Group



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The Upper Limit!

Total Joint Arthroplasty in Ambulatory Surgery Centers: Analysis of Disqualifying Conditions and the Frequency at Which They Occur

Matthew T. Kingery, BA [a], Germaine E. Cuff, PhD, BSN [b], Lorraine H. Hutzler, MPA [a,*], Jovan Popovic, MD [b], Roy I. Davidovitch, MD [a], Joseph A. Bosco, MD [a]

[a] *Department of Orthopaedic Surgery, NYU Hospital for Joint Diseases, New York, New York*
[b] *Department of Anesthesiology, NYU Langone Medical Center, Perioperative Care and Pain Medicine, New York, New York*

Results: Overall, 70.03% of all patients undergoing TJA were eligible for ASC. Of the ASA class 3 patients who did not meet any exclusion criteria but had systemic disease (51.11% of all ASA class 3 patients), 53.69% were deemed ASC-eligible because of sufficiently low severity of comorbidities. The most frequent reasons for ineligibility were body mass index >40 kg/m^2 (32.66% of ineligible patients), severity of comorbidities (28.00%), and untreated obstructive sleep apnea (25.19%).

Conclusion: A large proportion of TJA patients were found to be eligible for surgery in an ASC, including over one-third of ASA class 3 patients. ASC performed TJA provides an opportunity for increased patient satisfaction and decreased costs, selecting the right candidates for the ambulatory setting is critical to maintain patient safety and avoid postoperative complications.

Keys to Success = Addressing Barriers to Same day discharge

Preop

Intraop

Post Op

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Reasons and Risk Factors for Failed Same-Day Discharge After Total Joint Arthroplasty

Matthew F. Gong, MD [a], Mark J. McElroy, MD [a], William T. Li, MD [a], Logan E. Finger, MD [a, b], Michael Shannon [b], Alexandra S. Gabrielli, MD [a], Robert F. Tisherman, MD [a], Michael J. O'Malley, MD [a], Brian A. Klatt, MD [a], Johannes F. Plate, MD, PhD [a, *]

[a] *Department of Orthopaedic Surgery, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania*
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Table 1
Reasons for Missed SDD for Both THA/TKA, THA Only, and TKA Only.

Reason for Missed SDD	# Of Cases – Combined (n = 112)	# Of Cases – THA Only (n = 38)	# Of Cases – TKA Only (n = 74)	Percentage – Combined (%)
Failed physical therapy	37	12	25	33.0
Post-op hypotension	23	12	11	20.5
Post-op urinary retention	19	6	13	17.0
Post-op nausea/vomiting	16	2	14	14.3
Pain	5	1	4	4.5
Hypoxemia	4	0	4	3.6
Intra-op EKG changes	1	1	0	0.9
Anemia requiring transfusion	1	1	0	0.9
Errant TXA administration	1	0	1	0.9
Post-op radiation for HO	1	1	0	0.9
Post-op chest pain	1	1	0	0.9
Lethargy	1	1	0	0.9
Possible intra-op aspiration	1	0	1	0.9
Bradycardia	1	0	1	0.9

90%

SDD, same-day discharge; THA, total hip arthroplasty; TKA, total knee arthroplasty; EKG, electrocardiogram; TXA, tranexamic acid; HO, heterotopic ossification.

Patient Selection in 2024

- No Age ceiling (preferrably less than 80)
- Healthy, Motivated Patients
- Social Support!
- Hospital Setting or ASC

Exclusion Criteria:

- ASA 3 or greater*
- Hemoglobin <12
- BMI > 40*
- Unstable, poorly controlled disease (ESRD, CAD with prior PCI)
- Chronic Pain management

- Anxiety Disorders
- Cognitive Impairment /movement disorders

- **Poor Community ambulator**

- **No care at home for the first 72 hours post discharge.**

Pre-Operative Education: Patient and Family Preparedness

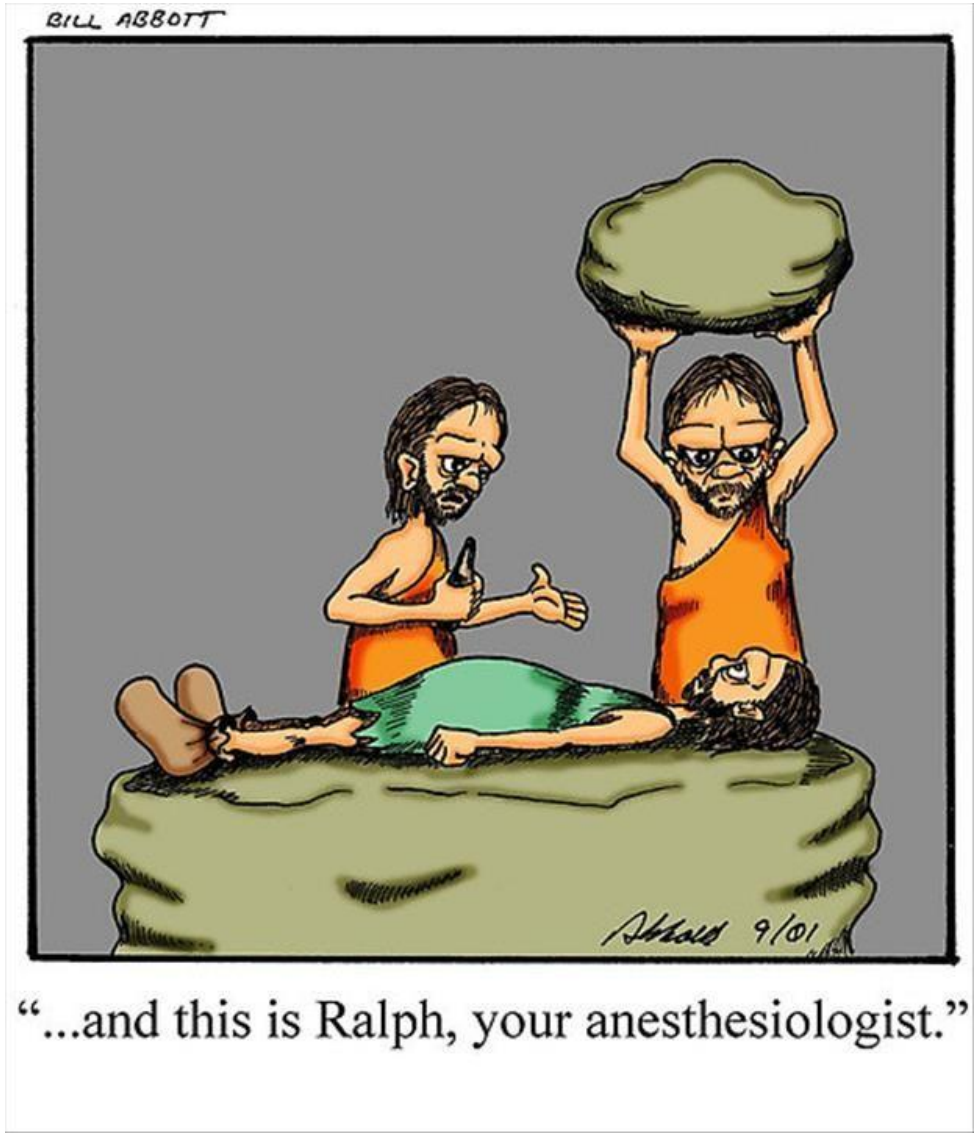
- Rehab (use of walker, stairs, car)
- Medication use
- Medication Side effects
- Nausea Management
- Swelling Management
- Hydration/Nutrition (Protein Rich foods, Healthy Meals)
- Getting the Home ready
- Fall Prevention

Social Support

- Patients can't do it alone
- Family or Friend buy-in is required to participate in the program
- 72 hour of direct support is needed
- Physician and Physician staff critical in contact with patient in the first 48 hours.
- **Minimizes anxiety, returns to the ER, re-admissions, excessive healthcare utilization**

Intra-op - Anesthesia

- Low Dose Spinal/short acting: mepivacaine 30 mg (120 min)
- Low Dose General
  - Propofol 50-100 mcg/Kg/min
- No intrathecal narcotics
- Limit Narcotics
  - Fentanyl < 100 mcg
  - Methadone
- BIS (Bispectral Index Monitoring)
  - Titrate with Propofol
- TXA
- Lactated Ringers ~1000 ml
- Warming Blanket and Warmed IV Fluids



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Impact of Anesthetic Choice on Time to Discharge for Same-Day Discharge Joints

Koorosh Kashanian*, Simon P. Garceau, MD, Paul R. Kim, MD, Geoffrey F. Dervin, MD, Christopher L. Pysyk, MD, Gregory L. Bryson, MD, Paul E. Beaulé, MD

The University of Ottawa's Division of Orthopaedic Surgery, The Ottawa Hospital, Ottawa, Ontario, Canada

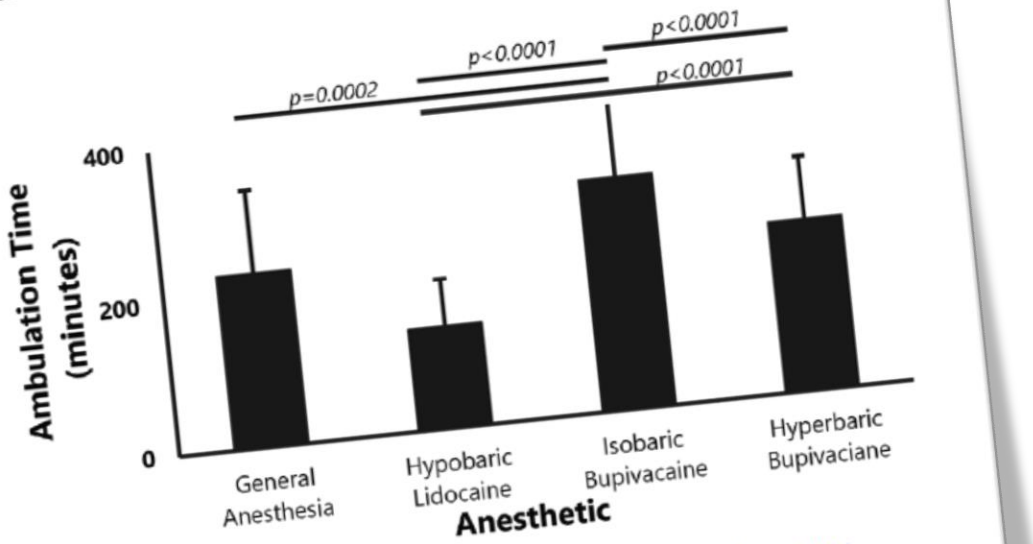

Fig. 3. Ambulation time (minutes) for the anesthetic groups.

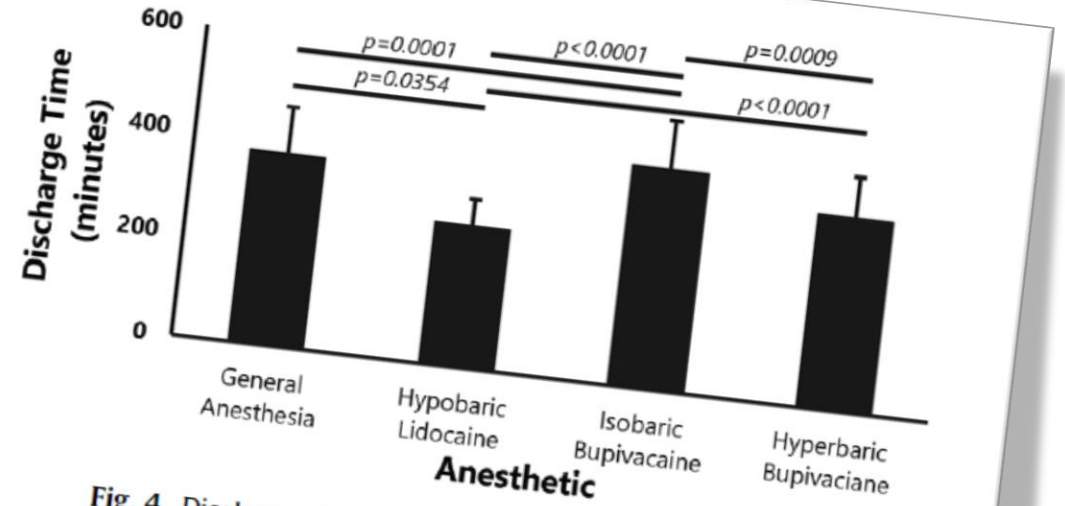

Fig. 4. Discharge time (minutes) for the anesthetic group.

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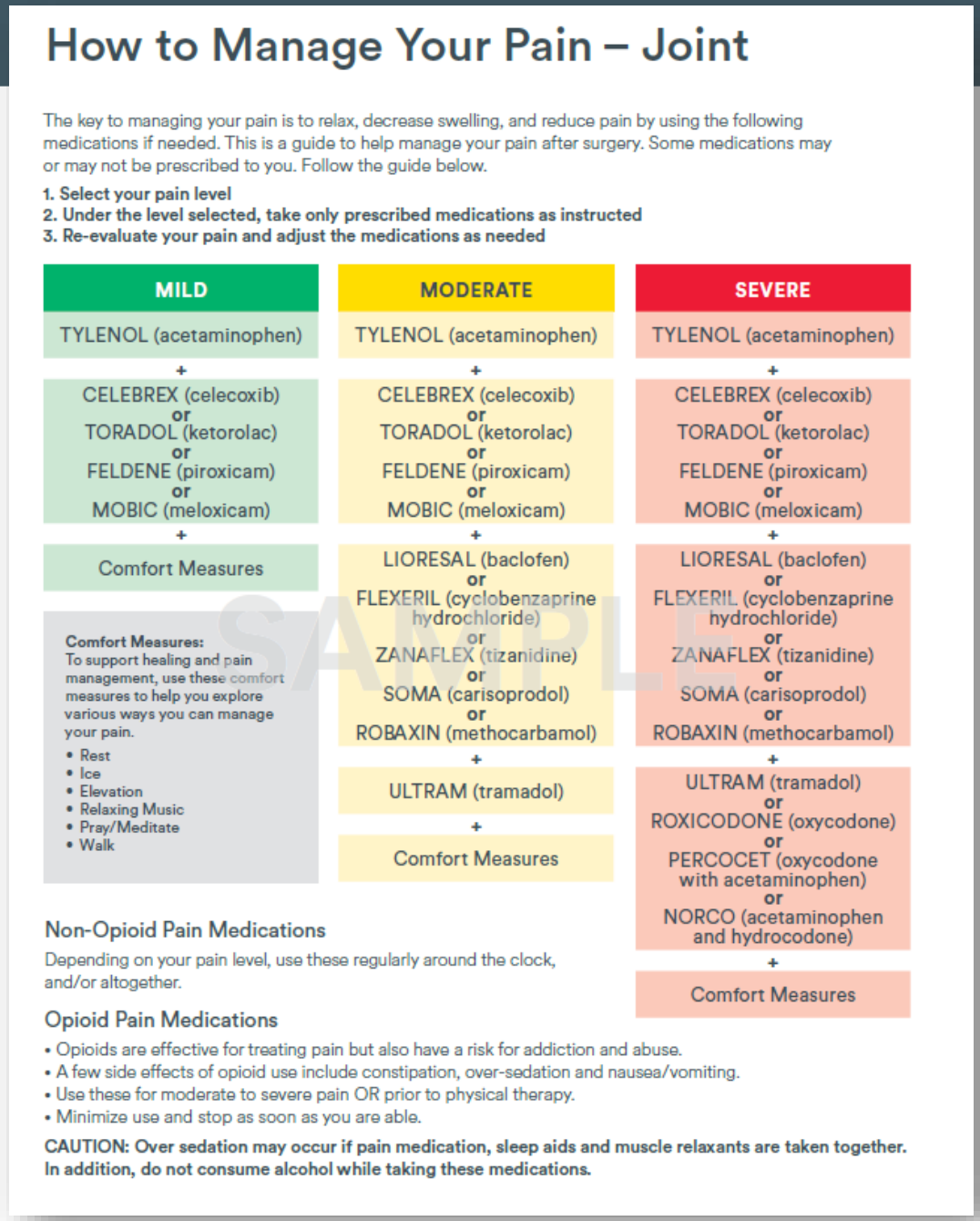
Multimodal Pain Management and EDUCATION

- Pre-Op Medications
  - Acetominophen 1000 mg
  - NSAID: Celecoxib/Meloxicam
  - +/- Dexamethasone 10 mg
  - +/- Scopolamine***
  - +/- Methadone
- Regional Blocks (Adductor canal, IPAC, +/- geniculate)
- Peri-articular blocks (Hips and Knees)
- Post Op pain management



How to Manage Your Pain – Joint

The key to managing your pain is to relax, decrease swelling, and reduce pain by using the following medications if needed. This is a guide to help manage your pain after surgery. Some medications may or may not be prescribed to you. Follow the guide below.

1. Select your pain level
2. Under the level selected, take only prescribed medications as instructed
3. Re-evaluate your pain and adjust the medications as needed

MILD	MODERATE	SEVERE
TYLENOL (acetaminophen)	TYLENOL (acetaminophen)	TYLENOL (acetaminophen)
+	+	+
CELEBREX (celecoxib) or TORADOL (ketorolac) or FELDENE (piroxicam) or MOBIC (meloxicam)	CELEBREX (celecoxib) or TORADOL (ketorolac) or FELDENE (piroxicam) or MOBIC (meloxicam)	CELEBREX (celecoxib) or TORADOL (ketorolac) or FELDENE (piroxicam) or MOBIC (meloxicam)
+	+	+
Comfort Measures	LIORESAL (baclofen) or FLEXERIL (cyclobenzaprine hydrochloride) or ZANAFLEX (tizanidine) or SOMA (carisoprodol) or ROBAXIN (methocarbamol)	LIORESAL (baclofen) or FLEXERIL (cyclobenzaprine hydrochloride) or ZANAFLEX (tizanidine) or SOMA (carisoprodol) or ROBAXIN (methocarbamol)
	+	+
	ULTRAM (tramadol)	ULTRAM (tramadol) or ROXICODONE (oxycodone) or PERCOCET (oxycodone with acetaminophen) or NORCO (acetaminophen and hydrocodone)
	+	+
	Comfort Measures	Comfort Measures

Comfort Measures:
To support healing and pain management, use these comfort measures to help you explore various ways you can manage your pain.

- Rest
- Ice
- Elevation
- Relaxing Music
- Pray/Meditate
- Walk

SAMPLE

Non-Opioid Pain Medications

Depending on your pain level, use these regularly around the clock, and/or altogether.

Opioid Pain Medications

- Opioids are effective for treating pain but also have a risk for addiction and abuse.
- A few side effects of opioid use include constipation, over-sedation and nausea/vomiting.
- Use these for moderate to severe pain OR prior to physical therapy.
- Minimize use and stop as soon as you are able.

CAUTION: Over sedation may occur if pain medication, sleep aids and muscle relaxants are taken together. In addition, do not consume alcohol while taking these medications.

Hypotension Management

- Preop Hydration
  - 16 oz Electrolytes night before
  - 16 oz Morning of surgery
- TXA
- No Drains
- IVF (1L NS)
- Albumin

Nausea Management

- Preop Hydration
- Aprepitant (Emend)
  - Nausea prophylaxis
  - Patient with high risk of PONV
- Standard Antiemetics
- Amisulpride (Barhemsys)
  - PONV rescue
- Caffeine

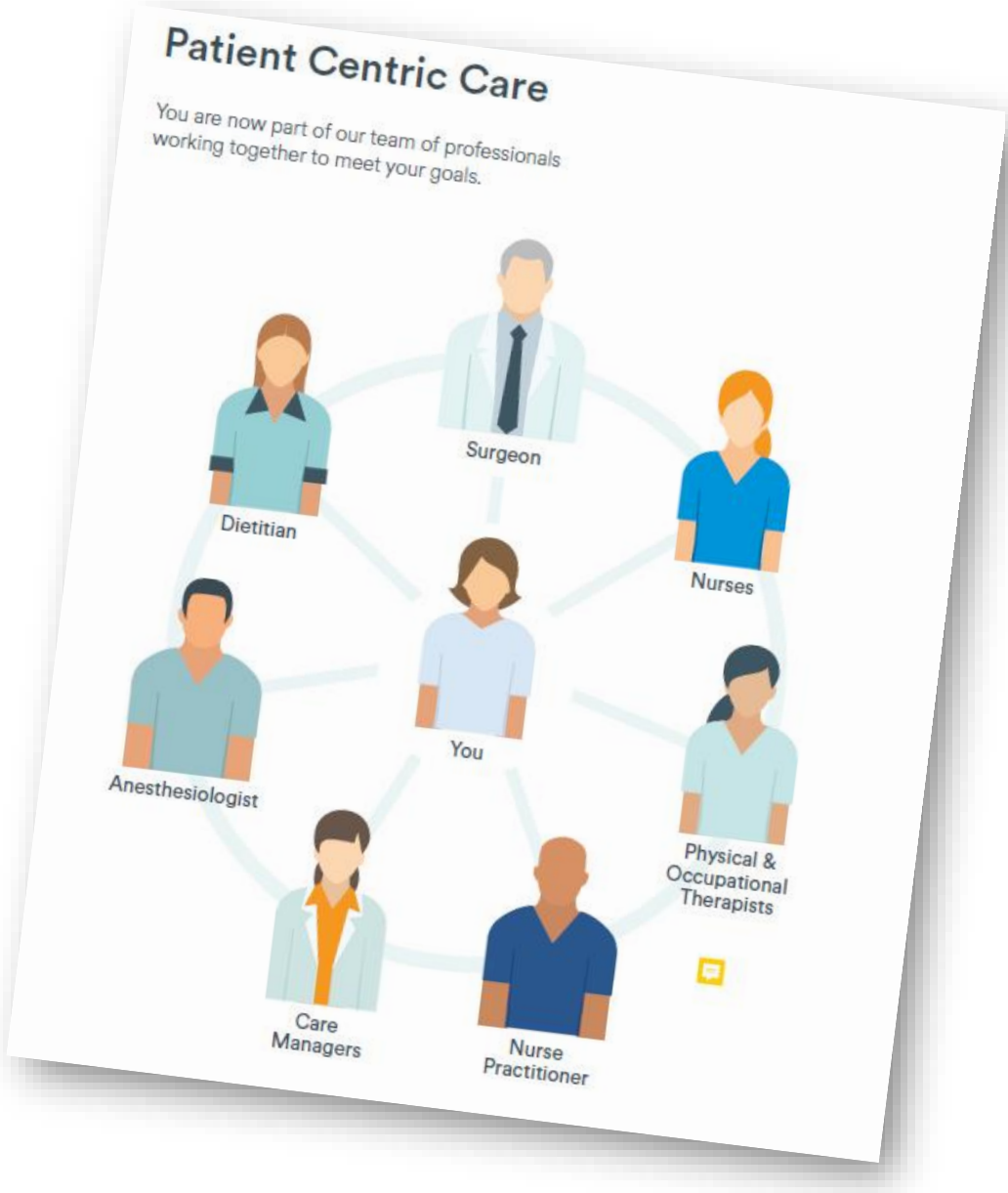
Post Op Urinary Retention

- Assess preoperative risk (IPSS)
- No Foley Catheter
- Continue BPH Meds
- Minimize anticholinergic meds
- Limit IV Fluids (1L)
- Permissive discharge without full voiding.

M. Ziemba-Davis et al. / The Journal of Arthroplasty 34 (2019) S343eS347

Right Institution

- It takes a village
- Coordinating Pathways:
  - Preoperative Hydration
  - Minimize length of spinals
  - Eliminating Foley catheters
  - Regional Blocks for extended pain relief
- Consistent OR Team to optimize surgical time.



Discharge Criteria

Vitals

- Within 20% of admission vitals
- **AND**
- BP greater than 100/40 and less than 160/90 and/or MAP >60
- HR greater than 50 and less than 100
- SpO2 greater than or equal to 95% on room air for at least 1 hour
- Temperature greater than 97 and less than 100F

Genitourinary

	Spinal anesthesia	No spinal anesthesia
Female	Able to void	Able to Void
Male, no history of BPH	Voids >100cc and PVR <300cc (if checked)	Able to Void
Male, history of BPH	Voids >100cc and PVR <300cc (if checked)	Voids >100cc and PVR <300cc (if checked)

Pain

- Controlled on oral medication
- Has not received IV narcotics within 60 minutes prior to discharge

Nausea

- Able tolerate oral intake and ambulate

Activity and motor function

- Cleared by PT (if ordered) or able to ambulate safely with nursing staff
- Return of sensory and motor abilities after regional and spinal anesthesia (Except for shoulder surgery)

Has help at home overnight

Surgical site

- Minimal bleeding, discharge, and swelling from surgical incision

Anterior Cervical Spine Surgery

- Monitor for 4 hours after surgery
- Passed bedside nursing swallow eval
- No changes in voice or signs of stridor

Post Discharge Care

- Patient comfortable
- PT milestones met.
- Next Day Physical therapy evaluation
- Phone call from Surgeon and Nurse in the first 48 hours

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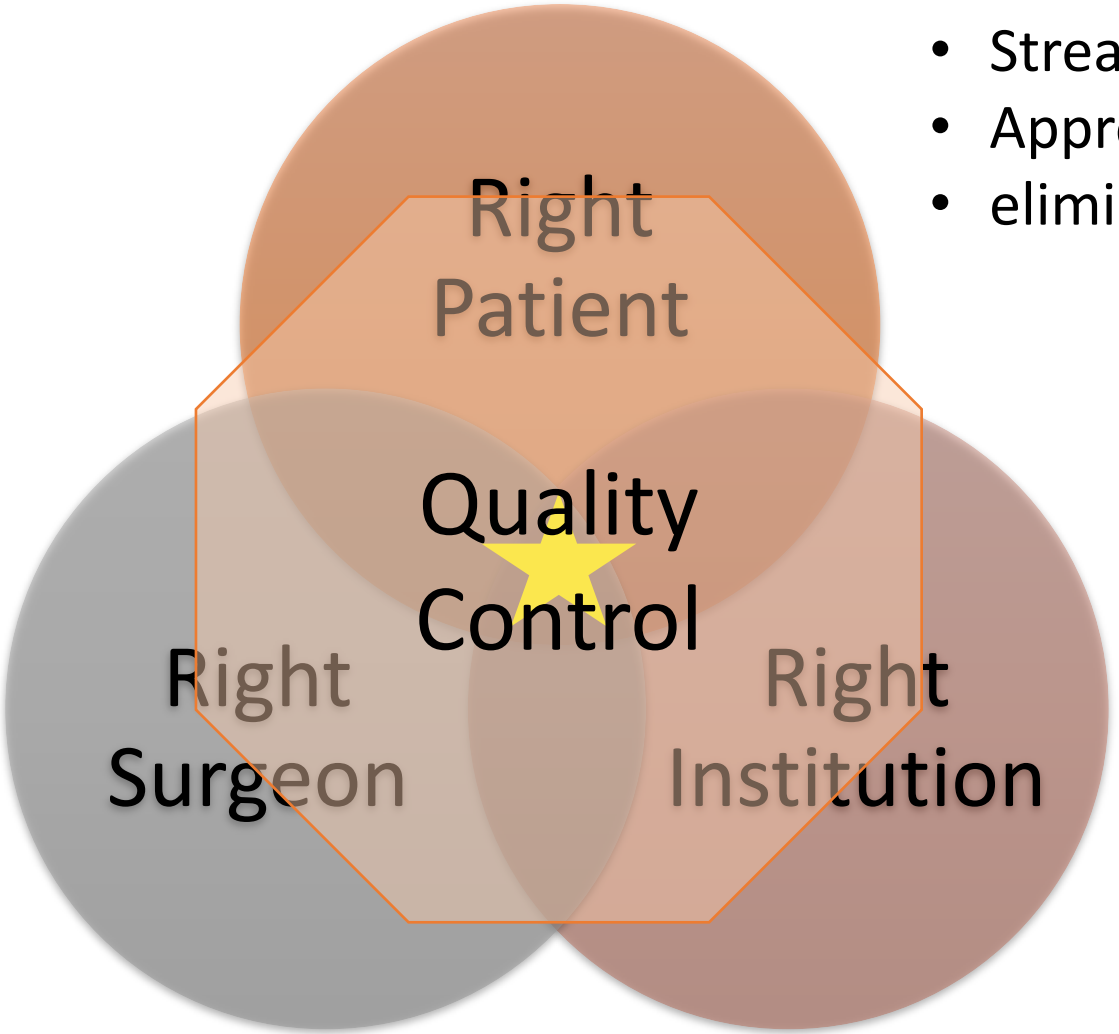
Keys to Success

- Patient Selection
- Education
- Social Support



- Streamlined clinical pathway
- Appropriate Anesthesia
- eliminating drains and catheters

- Minimizing Postop Urinary Retention
- Minimizing blood loss/nausea/hypotension

- Multimodal pain management
- Post Discharge follow-up

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